

The Impact of Group Health Behavior Change Coaching on Physical Fitness and Related Psychological Outcomes



Texas State University
San Marcos, TX
WellCats
Employee Wellness Program

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Objectives

Participants will:

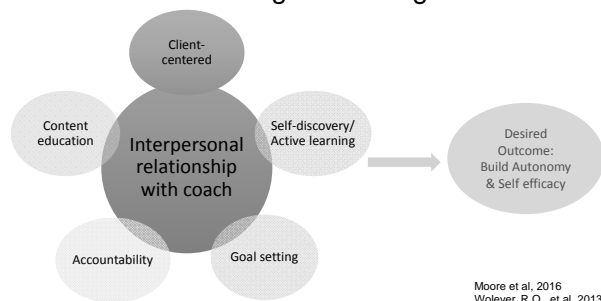
1. Become familiar with a group coaching curriculum based on contemporary theories of health behavior change that can be implemented in other university settings.
2. Be able to identify the individual and organizational values of health behavior change coaching.

Outline

- Background
 - Health behavior change coaching
- Study
 - Setting
 - Theoretical framework
 - Group coaching curriculum
 - Outcome variables
 - Results
- Implications for Higher Education

Background

Health Behavior Change Coaching

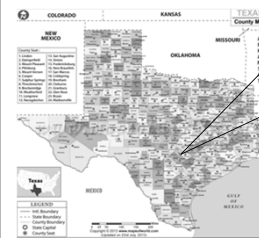


Summary of Evidence

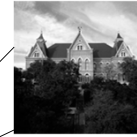
- Hill et al, 2015 (systematic review)
 - Health coaching effective for changing health behaviors & improving health outcomes
- Armstrong et al, 2013 (group coaching)
 - Group coaching less expensive and more efficient than 1-on-1 coaching
 - Little research exists on group coaching
- Dufour et al, 2014 (physical therapists provide group coaching)
 - 30-min coaching sessions 2x/week for 8 weeks with a PT & certified health coach
 - Supervised group exercise and mindfulness-based stress reduction
 - Topics: physical activity, nutrition, weight management, stress, sleep, flare ups and fatigue, fear and emotions
 - Sample: n = 17; mean age 63.3 with average of 3.2 chronic conditions
 - Group dynamic provided social support, motivation, & accountability
 - Outcomes: reduced fatigue, improved physical activity, improved walking speed

Study

Study Setting



Texas State University Employee Wellness Program



2014: 514 members
2017: 1079 current or former members

Enrollment: 38,808
Employees: 3,694

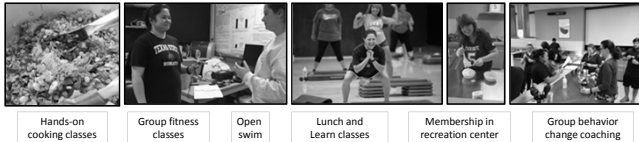
San Marcos, Texas

Demographics

- Race/Ethnicity
 - White 51%
 - Hispanic 41%
 - Other 8%
- Median Income
 - \$27,600 (46% < state average)

Study Design

- Quasi-experimental longitudinal study (15 weeks)
- Subjects
 - n=100 (Age 23-66, mean=47.8±10); Female (n=80) BMI=33.1; Male (n=20) BMI=31.6
 - Moderate to high risk status based on health risk appraisal
- Physical fitness and psychological construct testing pre-post
- Employee wellness program components



Hands-on cooking classes

Group fitness classes

Open swim

Lunch and Learn classes

Membership in recreation center

Group behavior change coaching

Intervention: Group Behavior Change Coaching

GROUP 1
Precontemplation
Contemplation

GROUP 2
Preparation
Action
Maintenance

Groups separated per Stage of Change
3 Coaching sessions (1 hour each)
5-20 Participants/group

Theoretical Framework

Transtheoretical Model (TTM)

Self-Determination Theory (SDT)

Stage of change

Self-efficacy

Decisional balance

Processes of change

Autonomy
(motivation) intrinsic
vs. extrinsic

Competence

Relatedness

Group Coaching Curriculum: Session 1

Content

Homework/Activities

- Intrinsic vs. extrinsic motivation (SDT)
- Connecting values to health behaviors (SDT)
- Pros vs. cons of adopting physical activity (TTM)
- Explanation of fitness test results
- Physical activity guidelines
- Wellness program offerings

- Goal setting related to weekly physical activity
- Identifying an accountable buddy/friend
- Schedule physical activity on calendar
- Create and review daily a 3 x 5 card listing benefits of physical activity

Group Coaching Curriculum: Session 2

Content

- Developing habits
- Trigger/reminder (TTM)
- Routine/behavior
- Reward (TTM)
- Mental imagery (TTM)
- Addressing self-talk (TTM)
- Types of rewards (extrinsic vs. intrinsic) (SDT)
- Problem-solving of challenges/barriers (SDT and TTM)
- Physical fitness components

Homework/Activities

- Research about a type of physical activity you haven't done and are interested in pursuing
- Mental imagery – imagine yourself as a physically active person
- Being mindful about self-talk and reframing negative self-talk
- Physical fitness self-assessment to determine if you are addressing all 5 components of physical fitness

Group Coaching Curriculum: Session 3

Content

- Review of intrinsic vs. extrinsic motivation (SDT)
- Review of habits (TTM)
- Strategies for addressing lapses, boredom (TTM)
- Summer wellness program offerings
- General question and answer

Homework/Activities

- Worksheet to work through a lapse
- Weekly goal setting worksheet

Study Outcome Variables

Transtheoretical Model

Stage of change

Self-efficacy for PA

Decisional balance

Processes of change

Self-Determination Theory

Perceived competence

Treatment self-regulation (autonomy)

Healthcare climate score (relatedness)

Health-Related Fitness Biometrics

VO₂ max (estimated)

Blood pressure, resting heart rate

Fat mass, fat-free mass, % body fat, weight, BMI

Hand grip strength, push ups, curl ups, sit and reach test

Statistical Analysis

- Paired t-tests comparing pre- and post-coaching measures
- Multiple regression analysis to predict self-efficacy



Study Results

- Participants (n=100)
 - 84 completed intervention
 - 77 completed
 - pre- and post-testing
- Average attendance (n=77)
 - EWP services=24.8
 - Coaching sessions=2.26



Outcome Variables: Transtheoretical Model

| | Pre-Test | Post-Test | Overall Change |
|----------------------------------|---------------|---------------|------------------|
| Processes of Change | Mean (SD) | Mean (SD) | Mean (SD) |
| Experiential Processes | | | |
| Increasing Knowledge | 3.222 (0.833) | 3.451 (0.882) | +0.229 (0.744)* |
| Warning of Risks | 2.750 (0.858) | 2.872 (0.953) | +0.122 (1.040) |
| Care about Consequence to Others | 2.882 (0.678) | 2.979 (0.938) | +0.097 (0.741) |
| Comprehending Benefits | 3.941 (0.729) | 3.955 (0.775) | +0.014 (0.587) |
| Increasing Healthy Opportunities | 3.163 (0.709) | 3.319 (0.815) | +0.156 (0.633)** |
| Behavioral Processes | | | |
| Substituting Alternatives | 3.007 (0.895) | 3.691 (0.804) | +0.684 (0.921)* |
| Enlisting Social Support | 2.448 (1.060) | 2.892 (1.074) | +0.444 (1.156)* |
| Rewarding Yourself | 2.951 (0.803) | 3.306 (0.836) | +0.354 (0.860)* |
| Committing Yourself | 3.722 (0.737) | 4.101 (0.664) | +0.378 (0.645)* |
| Reminding Yourself | 2.128 (0.843) | 2.913 (0.920) | +0.784 (0.838)* |

*p<0.01 **p<0.05

Outcome Variables: Transtheoretical Model

| | Pre-Test | Post-Test | Overall Change |
|---------------------------|---------------|---------------|------------------|
| | Mean (SD) | Mean (SD) | Mean (SD) |
| Stage of Change | 2.773 (1.120) | 3.909 (1.106) | +1.136 (1.391)* |
| Decisional Balance | 1.831 (0.941) | 2.013 (0.984) | +0.182 (0.953) |
| Self-Efficacy | 2.756 (0.666) | 2.967 (0.847) | +0.211 (0.770)** |

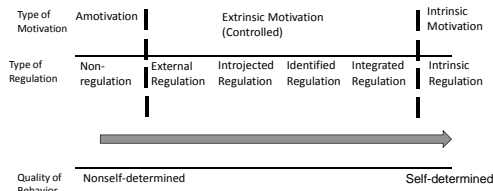
*p<0.01 **p<0.05

Outcome Variables: Self-Determination Theory

| | Pre-Test | Post-Test | Overall Change |
|----------------------------------|----------------|----------------|------------------|
| | Mean (SD) | Mean (SD) | Mean (SD) |
| Treatment Self-Regulation | | | |
| Autonomous Motivation | 36.087 (5.845) | 36.736 (5.634) | +0.623 (5.407) |
| Controlled Motivation | 18.130 (6.301) | 19.261 (7.638) | +1.130 (5.960) |
| Amotivation Motivation | 6.377 (3.232) | 6.203 (3.075) | -0.174 (2.584) |
| Perceived Competence | 5.322 (1.372) | 5.620 (1.316) | +0.297 (1.349)** |
| Healthcare Climate | 3.860 (1.454) | 4.800 (1.745) | +0.940 (1.759)* |

*p<0.01 **p<0.05

Self-Determination Continuum



Correlation Between Post-Test Self-Efficacy and both Pre-Test Self-Efficacy and Participant Use of Program Components

| | Pearson Coefficient | Significance |
|----------------------------------|---------------------|--------------|
| Pre-Test Self-Efficacy | 0.503 | 0.000* |
| Group Fitness Classes | 0.020 | 0.433 |
| Group Coaching Sessions | 0.266 | 0.012** |
| Open Swim | 0.041 | 0.365 |
| Student Recreation Center | 0.195 | 0.050 |
| Hands-on Cooking Class | 0.028 | 0.408 |
| Lunch and Learn Classes | 0.001 | 0.495 |

*p<0.01 **p<0.05

Multiple Regression of Post-Test Self-Efficacy and Participant Use of Program Components

| | Beta Coefficient | t | Significance |
|----------------------------------|------------------|-------|--------------|
| Group Fitness Classes | 0.140 | 1.124 | 0.265 |
| Group Coaching Sessions | 0.240 | 2.026 | 0.047* |
| Open Swim | 0.084 | 0.706 | 0.483 |
| Student Recreation Center | 0.188 | 1.734 | 0.088 |
| Hands-on Cooking Class | 0.030 | 0.274 | 0.785 |
| Lunch and Learn Classes | 0.155 | 1.343 | 0.184 |

*p<0.01 **p<0.05

Pre- and Post-Test Changes in Measures of Health-Related Physical Fitness

| | Pre-Test | Post-Test | Overall Change | % Change |
|---|--------------|--------------|----------------|---------------|
| Systolic Blood Pressure (mmHg) | 133.1 (16.7) | 129.1 (15.6) | -4.1 (12.4)* | -2.5 (10.3) |
| Diastolic Blood Pressure (mmHg) | 80.7 (10.4) | 78.5 (10.9) | -2.2 (7.9)* | -2.3 (10.1) |
| Resting Heart Rate (beats/min) | 76.6 (10.7) | 73.4 (9.7) | -3.2 (7.8)* | -3.6 (9.4) |
| Abdominal Circumference (cm) | 100.3 (15.5) | 99.3 (16.0) | -1.0 (4.1)* | -1.0 (3.8) |
| Weight (kg) | 83.7 (20.7) | 82.7 (45.1) | -1.0 (2.8)* | -1.2 (3.1) |
| Body Mass Index | 30.8 (7.2) | 30.6 (7.3) | -0.2 (1.0) | -0.7 (3.2) |
| % Body Fat | 40.9 (8.5) | 39.3 (8.9) | -1.6 (2.3)* | -3.9 (6.2) |
| Estimated VO ₂ max (ml/kg/min) | 25.6 (7.4) | 28.1 (8.4) | 2.8 (6.6)* | 14.0 (21.1) |
| Hand Grip Strength | 60.3 (17.1) | 62.5 (17.2) | 2.3 (6.9)* | 4.9 (13.7) |
| Push Ups | 4.4 (6.3) | 8.3 (7.3) | 3.9 (4.8)* | 121.3 (148.9) |
| Curl Ups | 12.6 (23.9) | 27.8 (32.8) | 15.4 (20.7)* | 166.3 (274.3) |
| Sit and Reach | 25.3 (9.4) | 27.8 (9.0) | 2.9 (4.1)* | 13.5 (18.0) |

*p<0.01 **p<0.05

Discussion

- Group health coaching was successful
 - Theory-based
 - TTM
 - Participants grouped by stage – tailoring of the coaching session
 - Strategies recommended based on processes of change
 - Strategies to build self-efficacy
 - SDT
 - Creating structure to build competence
 - Providing choice to build autonomy
 - Fostering relationships to provide a supportive environment
 - Sense of community (Armstrong et al, 2013)
- Limitations
 - Did not measure changes in physical activity
 - No control group

Implications

Implications for Higher Education

- Universities have faculty resources with knowledge and expertise in:
 - Behavior change
 - Specific health behaviors
 - Adult education
 - Communication
- Awareness of healthy behaviors is not enough to create behavior change....
 - Employees need guidance and support
 - Group behavior change coaching is a worthwhile service to add to programs

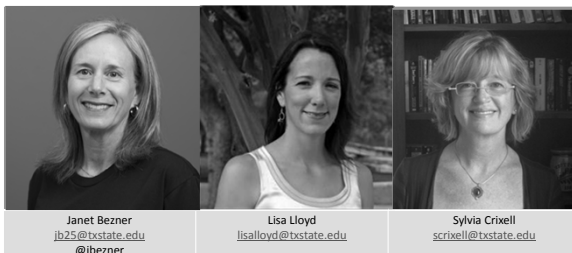
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Thank you!



<http://www.hr.txstate.edu/worklife/wellcats.html>



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